We claim:

1. A glucose sensor, comprising:

an apparatus comprising a plurality of metallic single-walled carbon nanotubes arranged and configured to define at least one interstitial space for sorption of hydrogen gas, at least one of said nanotubes positioned across and in electrical contact with an electrode pair; and

a glucose oxidase component contacting said nanotubes.

2. The sensor of claim 1 wherein said glucose oxidase component comprises a gas-permeable portion on said nanotubes.

3. A sensor of claim 2 wherein said glucose oxidase component further comprises a liquid permeable portion.

4. The sensor of claim 1 further comprising a voltage source and a current sufficient to at least partially reduce millimolar concentrations of hydrogen peroxide.

5. The sensor of claim 4 further comprising an electrometer responsive to hydrogen sorption on said nanotubes.

6. The sensor of claim 5 comprising an ohmmeter.

7. The sensor of claim 1 wherein said glucose oxidase is of bacterial origin.

8. The sensor of claim 1 wherein said glucose oxidase component comprises gluconic acid.

9. A method of sensing glucose, said method comprising:

providing an apparatus comprising a plurality of metallic single-walled carbon nanotubes with a voltage potential thereacross, said nanotubes arranged and configured to define at least one interstitial space and contacting a glucose oxidase component;

introducing glucose to said glucose oxidase component; and

monitoring electrical response upon interstitial sorption of hydrogen gas.

10. The method of claim 9 wherein said glucose is in a fluid medium at a concentration greater than about 1 mM.

11. The method of claim 9 wherein said medium has a volume less than about 10 μL.

12. The method of claim 9 wherein said medium comprises a bodily fluid.

13. The method of claim 9 wherein said glucose oxidase is of a bacterial origin.

14. The method of claim 9 wherein said response is a change in resistance of said nanotubes.

15. The method of claim 9 wherein glucose is oxidized to gluconic acid.

16. A method of using metallic single-walled carbon nanotubes to determine glucose concentration, said method comprising:

providing a plurality of metallic single-walled carbon nanotubes defining at least one interstitial space, at least one of said nanotubes positioned across an electrode pair, having an electrical resistance, and a glucose oxidase component;

introducing glucose to said glucose oxidase component;

applying a current across said electrode pair at least partially sufficient to produce hydrogen gas; and

determining a change in said resistance upon said glucose introduction.

17. The method of claim 16 wherein said glucose is in a fluid medium at a concentration greater than about 1 mM.

18. The method of claim 17 wherein said medium comprises a bodily fluid.

19. The method of claim 16 wherein said current is less than about 5 mA.

20. The method of claim 16 wherein said hydrogen gas is proportional to said glucose introduced.

21. The method of claim 20 wherein said resistance change is normalized.

22. The method of claim 21 wherein said normalized resistance is compared to a standard scale of glucose concentrations versus normalized resistance values.